



February 20, 2013

ULNRC-05959

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

10 CFR 50.54(f)

Ladies and Gentlemen:

**DOCKET NUMBER 50-483
CALLAWAY PLANT UNIT 1
UNION ELECTRIC CO.
FACILITY OPERATING LICENSE NPF-30
AMEREN MISSOURI RESPONSE TO NRC FOLLOW-UP
LETTER ON TECHNICAL ISSUES FOR RESOLUTION
REGARDING LICENSEE COMMUNICATION SUBMITTALS
ASSOCIATED WITH NEAR-TERM TASK FORCE
RECOMMENDATION 9.3**

References: 1. NRC letter from Matthew A. Mitchell to All Power Reactor Licensees and Holders of Construction Permits in Active or Deferred Status, "Follow-up Letter on Technical Issues for Resolution Regarding Licensee Communication Submittals Associated with Near-Term Task Force Recommendation 9.3," dated January 23, 2013, Accession No. ML13010A162

2. ULNRC-05922, "Emergency Preparedness Communications Assessment Results Requested by NRC Letter, 'Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident,'" dated October 30, 2012

On January 23, 2013, the U.S. Nuclear Regulatory Commission (NRC) Staff issued the letter identified above as Reference 1 to Union Electric Company (dba Ameren Missouri) for Callaway Plant. The Enclosure to that letter identified eight generic technical issues needing resolution to determine Callaway Plant's communications capability regarding a station black-out event. The Staff identified these eight generic issues to provide Ameren Missouri with an opportunity to supplement the Communication Assessment Results submittal associated with Near-Term Task Force

Recommendation 9.3 (Reference 2). The NRC requested a response to the eight generic technical issues identified in Reference 1 within 30 days from the date of that letter.

Enclosure 1 to this letter provides Ameren Missouri's response for Callaway Plant to the eight generic technical issues identified in Reference 1. Enclosure 1 to this letter supplements Ameren Missouri's Communication Assessment Results that were provided in Reference 2.

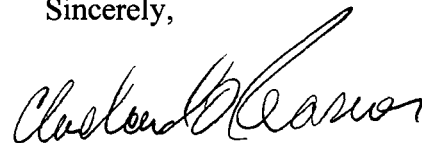
This letter does not contain any new or revised regulatory commitments.

If you have any questions concerning the content of this letter, please contact Scott Maglio, Regulatory Affairs Manager, at 573-676-8719.

I declare under penalty of perjury that the foregoing is true and correct.

Sincerely,

Executed on: 2/20/13



Cleveland O. Reasoner
Vice President, Engineering

SJM/nls

Enclosures:

1. Response to NRC Follow-Up Letter on Technical Issues for Resolution Regarding Licensee Communications Submittals Associated with Near-Term Task Force Recommendation 9.3
2. Communications Enhancement Action Plan

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**Response to NRC Follow-Up Letter
on Technical Issues for Resolution Regarding
Licensee Communications Submittals Associated with
Near-Term Task Force Recommendation 9.3**

Generic Technical Issue 1

The staff identified that licensees need to discuss how the power for the equipment analyzed is expected to be available, and how the planned communications enhancements are expected to be maintained. The following areas were identified:

- A. A detailed description of how power will be maintained for (1) planned or potential enhancements to the communication links and (2) existing equipment analyzed to be available.
1. The number of replacement batteries expected to be needed for a 24-hour duration, per the Nuclear Energy Institute (NEI) 12-01 "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities."
 2. Generator availability to charge batteries without offsite equipment for a duration of 24 hours.
 3. A description of how ancillary equipment supports operations for a 24-hour duration (e.g., adequacy of fuel supplies for the generators; and the minimum number of battery chargers expected to be necessary).

Callaway Plant Response:

The following information supplements the information provided in ULNRC-05922.

Ref: UNLRC-05922 Attachment 2 pages 4, 25

- A. Callaway Plant will use portable diesel generators, a portable radio cart fitted with a self-powered generator, spare batteries, and battery chargers to maintain power for our planned enhancements to the communications links. Callaway Plant has three (3) portable generators to provide the necessary AC power to our communications systems and equipment in the event of an Extended Loss of AC Power (ELAP).
1. Each satellite phone will have at least two (2) spare rechargeable batteries. This will allow each satellite phone to have one battery installed, one charged spare battery to be carried by the user, and an additional battery being charged. Each portable radio has at least one (1) spare battery.
 - The Iridium Satellite Phone batteries have a standby duration of up to 30 hours and a talk time of 3.1 hours. The current batteries for the Satellite Phones can be charged in 3.25 hours.
 - The batteries for the hand-held portable radios typically last a 12-hour shift based on actual use by the Callaway Plant Operations Department non-licensed operators. Operations maintains a spare battery in the charger for each radio while the radio is in use. The plant radio batteries typically can be charged in less than two (2) hours.

- As stated in our assessment, the precise number of satellite phones, hand-held portable radios, and their associated chargers will not be determined until the development of the FLEX Strategies is complete.
 - The portable radio cart is also fitted with a self-powered generator to supply power for the battery chargers for the portable radios.
2. Each of the three (3) portable diesel generators discussed above are rated at 10 kW and have more than sufficient capacity to be able to provide emergency AC power to the satellite phone and radio battery chargers. The portable radio cart is also equipped with chargers for radio batteries.
 3. There is sufficient diesel fuel oil storage on site in multiple, diverse locations to support the communications equipment. In the event that the diesel fuel oil tanks for portable equipment do not survive the Large Scale Natural Event (LSNE), a plan has been developed to utilize fuel oil from the two (2) 550- gallon day tanks for the emergency diesel generators. This plan will be contained in a procedure. The procedure number and title have not yet been determined.

Callaway Plant has sufficient battery charger capacity to be able to charge the spare batteries for each required portable radio and satellite phone. However, the exact number of satellite phones and plant radios has not yet been determined as the FLEX strategies Callaway Plant will review the strategies to ensure sufficient communications equipment is available to implement the strategies. This review will include ensuring sufficient spare batteries and battery chargers are available.

Generic Technical Issue 2

The use and function of the planned enhancements for the improvement of communications.

- A. A description of the use of the planned enhancements.
1. A discussion of whether each planned enhancement identified is only to be used for maintaining the communication link identified, or if it is expected to be shared among other communication links.
 2. A general description of the planned enhancement and how the equipment will be integrated.
 3. The title and general description of the procedure that will be developed and used by plant personnel to describe protocols for shared usage of communication capabilities.

Callaway Plant Response:

A. Callaway Plant provided a description of the planned enhancements for the improvement of communications in our original response (Ameren Missouri Letter ULNRC-05922). The description was included in Attachment 2 in the Assessment Summary on pages 4 and 5. The following information supplements the information provided previously.

1. Only one (1) of the planned enhancements for communications (a communications link to Federal Agencies, (e.g., US Coast Guard)) does not have a dedicated link. This link will rely on one of the other links in the facility. This communication link is not expected to have significant usage.
2. Fifteen (15) satellite telephones have been procured to provide communication links with various response organizations in the event of an ELAP. Four (4) satellite phones have been placed in the Off-Site Emergency Operations Centers to ensure communications are maintained with the Off-Site Response Organizations (ORO). The remaining eleven (11) satellite phones have been distributed to the Emergency Response facilities. External antennas for the satellite phones will be installed for the Control Room, Technical Support Center (TSC), and Emergency Operations Facility (EOF) to ensure this communication link is available after the event. In the event that an antenna does not survive the event, a portable antenna that can be easily deployed is being evaluated for these locations.

A portable radio cart has been procured. This radio cart is equipped with a self-powered generator, a pneumatic mast, and power outlets. The radio cart will be deployed to provide power to the in-plant passive antenna system to enable radio communications within the power block buildings. In addition, the radio cart will be able to provide power for battery chargers for the portable radios. While the outfitting of the new portable radio cart is being completed, a portable radio cart with essentially the same capabilities has been located on-site.

Three (3) portable generators rated at 10 kW will provide emergency AC power to the satellite telephones, radios, and associated battery chargers.

3. Callaway Plant does not have a procedure describing protocols for shared usage of communications capabilities as the current plan has only one (1) shared link that is expected

Enclosure 1
to ULNRC-05959
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to have minimal use. Since each facility manager will decide the priority of the communications from/to the facility based on the conditions at that time, a procedure is not warranted.

Generic Technical Issue 3

The protection of the new equipment purchased as a planned enhancement as well as the protection of existing communications equipment analyzed as being available.

- A. A discussion of how the existing equipment analyzed to be available and enhancements to these communication links as well as associated ancillary equipment will be stored in a manner that is protective from a large scale natural event.
 - 1. A description of pre-identified areas that are considered protective for existing equipment and whether new equipment will be stored in a similar location. The title and brief description of a procedure for new communications equipment storage is acceptable, if this procedure is planned to be developed in the future; or a statement that this will be completed in alignment with NRC order EA-12-049.
 - 2. Equipment stored offsite, should have an analysis of duration to set up this equipment for use.
 - 3. The analysis demonstrates that the existing equipment that is expected to be available will be functional.

Callaway Plant Response:

- A. Callaway Plant will store the communications equipment (e.g., portable generators, portable radio cart) in our TSC, EOF, or other location that meets the requirements of NRC Order EA-12-049.
 - 1. Callaway Plant will be constructing a building that meets the requirements of NRC Order EA-12-049. Another existing location onsite is being evaluated as a storage area for Communications as well as FLEX Equipment. If it is determined that this location meets the requirements of NRC Order EA-12-049 and additional storage area is needed, then communications equipment may be located in this location. A procedure for the new communication equipment storage will be developed in alignment with NRC Order EA-12-049.
 - 2. At this time, Callaway Plant does not store any of the communications equipment off-site. If Callaway Plant elects to store the communications equipment off-site, then an analysis of duration to set-up this equipment for use will be performed.
 - 3. Since Callaway Plant assumed that the permanently installed equipment not installed in a robust structure would not survive the event, this analysis was not required. Consequently, it was not performed.

Generic Technical Issue 4

The programmatic controls for the use of the new equipment purchased as a planned enhancement.

- A. A description of planned proceduralization and training for the use of these planned enhancements. It is acceptable to provide the title and description of a new procedure for new communications equipment.
1. A description of any credited manual actions and their procedures.
 2. A description of any maintenance for this equipment, including operability testing.
 3. A description of any periodic inventory checks.
 4. A description of planned staff training.

Callaway Plant Response:

- A. The following provides a description of planned proceduralization and training for the use of these planned enhancements:
1. Callaway Plant will develop procedures for the following credited manual actions to deploy the communications equipment:
 - Deployment of the radio cart
This procedure will provide instructions to obtain the radio cart from its FLEX storage location, move the radio cart to its designated area, and set up the radio cart. Specific instructions on usage of the radio cart are planned to be included in a desk-top instruction located on the radio cart.
 - Deployment of the portable diesel generators
This procedure will provide instructions to obtain the portable generators from their FLEX storage location, move them to their designated area, and set up the generators. Specific instructions on usage of the generators will either be in a separate procedure or as desk-top instructions located with the portable generators.
 - Set-up and usage of the Satellite Phones
The desk top instructions for the usage of the satellite phones are included with the satellite phones in their present storage locations in the Control Room, the TSC and the EOF. The desk top instructions may remain as desk top instructions or may be converted into a procedure at a later date. That decision has not yet been made.
 - Set-up and usage of the Plant Radios
The plant radios are being evaluated for use in direct communication with another plant radio in addition to their current use with the antenna and repeater system. If this capability will be implemented, then the plant radios will require re-programming. A desk top instruction or a procedure will be developed to provide directions to the plant radio users on the usage of these capabilities.

The FLEX program procedures are under development. Callaway Plant may include the above in one procedure, in separate procedures, or may include the above as Appendices to an overall FLEX Procedure.

2. The equipment and systems added by Callaway Plant to support communications after an LSNE will be included in the Plant Preventive Maintenance and Surveillance Programs.
Ref: UNLRC-05922 Attachment 2 page 26
3. Inspections of emergency preparedness equipment and supplies are performed in accordance with various Emergency Preparedness procedures. These periodic checks are performed on a weekly to quarterly basis. The communications equipment added to enhance communications after an LSNE will included in the appropriate procedure(s) to perform the periodic inventory checks.
Ref: UNLRC-05922 Attachment 2 page 26
4. The Callaway Plant Communications Assessment stated that "...Periodic training is provided to all ERO Members...This includes the use of communications systems and equipment." The report also stated, "The Manager, Training, provides oversight of the program to ensure the program is consistent with the principles of the Systematic Approach to Training."
Ref: UNLRC-05922 Attachment 2 page 27

Generic Technical Issue 5

A discussion on what assumptions are used as part of the Communications Assessment.

- A. A description of the assumptions used for the submitted Communications Assessment Summary, and technical justification for any differences from the assumptions within NEI 12-01, Sections 2.2 “Assumptions Common To Both Assessments” and 2.4 “Assumptions For Communications Assessment.”

Callaway Plant Response:

- A. The Callaway Plant Communications Assessment listed the assumptions used. Callaway Plant did not identify any additional assumptions that were not listed in NEI 12-01 Sections 2.2 and 2.4.
Ref: UNLRC-05922 Attachment 2 pages 5 - 7

Generic Technical Issue 6

How plant personnel will be notified in the event of a large scale natural event that causes a loss of all AC power.

- A. A description and title of the procedure for emergency notification of essentially all plant staff within 30 minutes [If applicable to the licensee Emergency Plan].
- B. A description and title of the procedure for notification of emergency response organization staff (i.e., self-activation) [If applicable].

Callaway Plant Response:

Ameren Missouri letter ULNRC-05922 provided the information on how plant personnel will be notified of a large scale natural event that causes a loss of AC Power, as well as Emergency Response Organization (ERO) Personnel Notification/Reporting requirements. Procedure descriptions and titles were not provided in the ULNRC letter and are therefore provided below.

Ref: UNLRC-05922 Attachment 2 pages 20, 22

- A. EIP-ZZ-00102, Emergency Implementing Actions, provides for the notification of onsite personnel. Callaway Plant committed to revising the emergency procedures regarding notification of site personnel of an emergency to include use of security sweeps if the plant PA system is unavailable, by June 1, 2013. (correction action program number CAR 201201954, Action 9.1)
- B. EIP-ZZ-00200, Augmentation of the Emergency Response Organization, provides the guidance for the augmentation of the Callaway Plant ERO. This procedure provides the instructions for notification of ERO personnel as well as instructions on when to self-report in the case of an area wide natural disaster.

Generic Technical Issue 7

How communications will be maintained during the period of final implementation of the communication enhancements.

- A. Identification and description of the interim actions that will be in place to bridge the gap until all final mitigation strategies being proceduralized are implemented. This also includes equipment protection.

Callaway Plant Response:

- A. Fifteen (15) satellite phones have been located in the various emergency response facilities (ORO, Control Room, TSC, and EOF). Desk top instructions for satellite phone usage are provided at each location. The use of the satellite phones may require the user to step out of the ERO facility if the antenna is not yet installed or is damaged by the LSNE. A portable antenna is being evaluated for use with the satellite phones in these situations.

In the event that the plant radio antenna becomes unavailable after the LSNE, Callaway Plant radios will automatically switch to the secondary antenna which is called the Callaway repeater tower. The Callaway repeater tower is located about 1.5 miles south of the plant. It has an automatic start self-powered generator for AC power back-up which is located in a cinder block building. Callaway Plant is evaluating the feasibility of reprogramming the portable radios for direct radio-to-radio communications mode in the event that both the primary antenna for the plant radio system and the secondary antenna (repeater) are unavailable after the event. This will provide an additional method of communications.

The plant passive antenna system in the power block will be modified for direct connection to the portable radio cart to enhance in-plant communication capability (Estimated Complete Date – October 4, 2014). Until the passive radio antenna is modified, Callaway Plant will depend on the Gaitronics PA system (for as long as it is available after the event), radios as described above, and direct communications (i.e., face-to-face) within the power block.

The communications enhancement equipment (e.g., portable generators, portable radio cart) will eventually be stored in our TSC, EOF, or other location that meets the requirements of NRC Order EA-12-049 (as stated in the Callaway Plant Response to Generic Technical Issue 3). Until such time that a location that meets the requirements of NRC Order EA-12-049 is built, Callaway Plant will store the equipment in diverse locations.

Callaway Plant will evaluate the use of On-Shift Learning Packages to provide information to the on-shift crews on the use of the portable generators and portable radio cart until such time that formal training per the Systematic Approach to Training can be provided.

Generic Technical Issue 8

Descriptions are needed regarding how communications will be maintained with the on-site and in-plant response teams and offsite response organizations if their communication links are not expected to be available.

- A. A timeline for when the evaluation for site specific improvements for on-site and in-plant response teams will be completed.
- B. A discussion of the enhancements that are planned for the offsite response organization communication links.

Callaway Plant Response:

- A. Enclosure 2 provides current estimated completion dates associated with communication enhancements. Enclosure 2 is provided for information only since it is subject to change and contains only additional details associated with implementation of communication enhancements that have been previously identified (Reference ULNRC-05868). There are no new or revised commitments contained in Enclosure 2.
- B. Callaway Plant provided each Offsite Response Organization with a satellite phone to be used if the primary and back-up communications methods are not available after an LSNE.
Ref: UNLRC-05922 Attachment 2 pages 4, 21

Communications Enhancement Action Plan

IMPLEMENTING ACTIONS	ESTIMATED COMPLETION DATE
Satellite Phones:	
Procure additional satellite phone batteries to ensure there are at least three (3) batteries per satellite phone.	12/31/2013
Develop preventive maintenance (PM) and testing requirements for the satellite phones. Generate PM Task Sheets, etc. to implement these requirements.	12/31/2013
Evaluate and procure, if feasible, portable antennas for the satellite phones in the Control Room (CR), Technical Support Center (TSC), and Emergency Operations Facility (EOF),	03/31/2014
Develop procedure or desk top instruction for the set-up and use of the satellite phones, including docking stations and portable antennas, as needed. A desk top instruction has been issued for the use of the satellite phones until the permanent antennas are installed.	10/04/2014
Install Satellite Phone antenna system connection including docking stations for the satellite phones – Modification MP 12-0014.	10/04/2014
Portable Radio Cart:	
Obtain equivalent portable radio cart until construction of new portable radio cart is completed and cart is on-site.	Complete 09/30/2012
Complete construction of new portable radio cart.	09/30/2013
Develop preventive maintenance (PM) and testing requirements for the portable radio cart. Generate PM Task Sheets, etc. to implement these requirements.	09/30/2013
Develop radio cart communications plan to include deployment, connection, and use of the portable radio cart. This includes procedure development and issue.	12/31/2013

IMPLEMENTING ACTIONS	ESTIMATED COMPLETION DATE
Portable Hand-Held Radios:	
Update work instructions for radio inventory with location of radios, batteries, and chargers	12/31/2013
Develop preventive maintenance (PM) and testing requirements for new radio system equipment. . Generate PM Task Sheets, etc. to implement these requirements.	12/31/2013
Evaluate feasibility of portable radios in the radio-to-radio communications mode of operation.	12/31/2013
Based on the results of the evaluation radio-to-radio communication mode of operation, reprogram the portable radios and provide instructions on the use of the radios in this mode of operations.	03/31/2014
Evaluate and procure, if feasible, portable antennas for the portable radio base units in the Control Room (CR), Technical Support Center (TSC), and Emergency Operations Facility (EOF),	03/31/2014
Install passive antenna system connection – Modification MP 12-0014	10/04/2014
Portable Generators:	
Develop and issue procedures for the portable generator deployment, connection, and fueling plan to ensure ability to provide power for a minimum of 24 hours.	12/31/2013
Develop preventive maintenance (PM) and testing requirements for new portable generators. Generate PM Task Sheets, etc. to implement these requirements.	12/31/2013

IMPLEMENTING ACTIONS	ESTIMATED COMPLETION DATE
Training:	
Evaluate training needs specific to the use of communications equipment during an extended loss of AC power event. Consider use of On-Shift Learning Packages for new communications equipment.	09/30/2013
Provide training on communications equipment based on results of the training needs evaluation	03/31/2014
Other:	
Revise EIP-ZZ-00102, Emergency Implementing Actions, regarding notification of site personnel of an emergency to include the use of security sweeps if the plant PA system (Gaitronics) is unavailable	06/01/2013
Store communications equipment in temporary diverse storage locations until FLEX Building(s) is complete or another storage facility meeting the requirements of NEI 12-06 is identified.	06/30/2013
Evaluate adequacy of communications links after FLEX Strategies have been fully developed to ensure there are sufficient ERO communications links per NEI 12-06.	10/31/2013
Procure additional communications equipment (e.g., satellite phones, portable radios, spare batteries, etc.), identified by the review of adequacy of communications links after FLEX Strategies have been fully developed, if needed.	06/30/2014
Revise the appropriate procedure to perform the periodic inventory checks of the communications equipment added to enhance communications after an LSNE. This is an on-going activity as the new communications equipment is being installed and/or implemented in the field.	10/31/2014